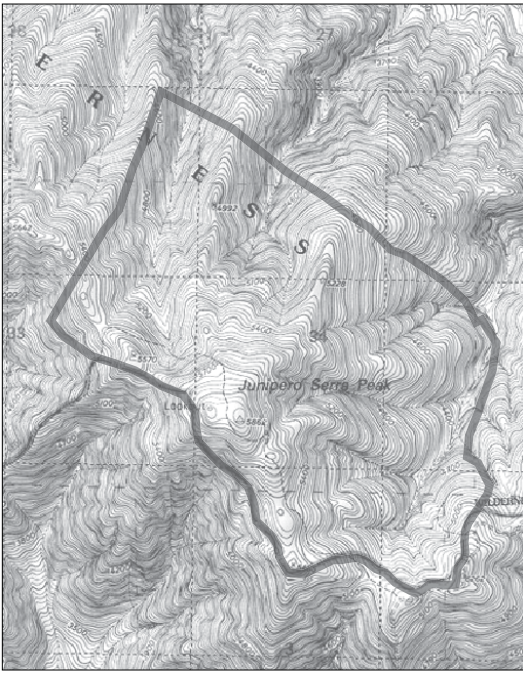


48. Junipero Serra Peak (Griffin 1975a)



**Figure 99—
Junipero Serra
Peak ecological
survey area**

Location

This area was dropped from RNA consideration in 1979. It lies in the Monterey Ranger District within the boundary of Ventana Wilderness in Los Padres National Forest, about 17 air miles (27 km) W. of King City in Monterey County. The study area comprises portions of sects. 27, 28, 33, and 34 in T20S, R5E (36°09'N., 121°25'W.), USGS Junipero Serra 7.5' quad (fig. 99). Ecological subsection – North Coastal Santa Lucia Range (261Aj).

Target Element

Sugar Pine (*Pinus lambertiana*)

Distinctive Features

The sugar pine in this area and nearby Cone Peak are topographically isolated from other sugar pine populations in the Coast Ranges. The closest sugar pine forest to the S. is in the San Rafael Mountains of Santa Barbara County where a significant area rises above 4000 ft (1219 m). To the N., the next sugar pine forest is near Mount St. Helena in Sonoma County at somewhat

lower elevations. Understory shrubs and herbs associated with the pine forest are also isolated from distant forests, and many of them differ from the nearby isolated montane species on Cone Peak. The most interesting disjunct is *Cycladenia humilis* var. *venusta*, which has one population under the pines on the summit of Junipero Serra Peak and three tiny colonies on Cone Peak. The type specimen of this variety is collected at the peak of Junipero Serra Peak. Mountain chickadee (*Parus gambeli*), common in S. California and Sierra Nevada montane forest, is present in the S. Coast Ranges only in the Junipero Serra Peak and Cone Peak forests.

An interesting feature of this sugar pine population is the unexpectedly high frequency of a major gene for resistance to white pine blister rust. This fatal disease, caused by an exotic pathogen, has caused high mortality to sugar pine and other white pine in N. America. Natural resistance in other sugar pine populations ranges from near 0 percent in the S. Cascade Range to 8 percent in the S. Sierra Nevada; on Junipero Serra, it is 8.9 percent (Kinloch 1992). No blister rust has as yet been reported in this stand.

Rare plants: *Galium clementis* (CNPS List 4), *Lupinus cervinus* (CNPS List 4), and the following important disjunct plants: *Allium campanulatum*, *Aspidotis densa*, *Carex multicaulis*, *Cycladenia humilis*, *Eriogonum spergulinum* var. *reddingianum*, *Gayophytum heterozygum*, *Penstemon corymbosus*, *Pyrola picta* var. *aphylla*, *Ribes roezlii*, *Rubus leucodermis*, *Stipa (latiglumis) sp.*, and *Viola purpurea*.

Physical Characteristics

The study area covers approximately 1280 acres (518 ha). Elevations range from 3780 to 5844 ft (1152-1781 m) at the summit of Junipero Serra Peak. Topographically, except in one small area SW. of Junipero Serra Peak, it contains steep slopes on the N. flank of a ridge separating Santa Lucia Creek and San Antonio Creek watershed. Three streams dissect the area and flow into Santa Lucia Creek on the N.

The area was mapped as one geological unit, the Mesozoic granitics, and soils are relatively uniform. The main sugar pine forest on the summit and along

the two N. streams was mapped as Junipero loamy sand, 30-50 percent slope. Most of the remaining forest and chaparral on N. aspects was mapped as a Sur-Junipero complex, 50-80 percent slopes. Some chaparral soils on the ridgetop and S. aspect were mapped as Cieneba-Rock outcrop complex, 50-75 percent slope. The rock patches on both aspects were called Rock outcrop-Xerorthents association. Detailed descriptions of these soils are not available.

Junipero Serra Peak is the tallest peak in the Santa Lucia Mountains. There is a fire lookout, with a tower and building, near the peak. No long-term weather records have been taken on Junipero Serra Peak. The only quantitative data from the summit were gathered by astronomers between August 1965 and October 1967. Temperatures during that period ranged from 13 to 86 °F (-11 to 30 °C). Recorded in the 1965-66 season were 19.88 inches (50.59 cm) of rain and 36.6 inches (93.13 cm) of snow. In the 1966-67 season, 39.35 inches (100.13 cm) of rain and 119.7 inches (304.58 cm) of snow were recorded.

Association Types

After study of aerial photos and field checks, vegetation was mapped according to dominant species. Four major types were delineated: chaparral, hardwood forest, conifer forest, and special communities.

Chamise Chaparral (37200): This is common in the Santa Lucia Range. In the study area it covers the lower slopes, and the dominant species is *Adenostoma fasciculatum*. *Arctostaphylos glauca* shrubs or small trees are widely scattered in this chaparral. On less exposed slopes a taller form of chaparral dominated by scrub oak (*Quercus dumosa* / *turbinella* complex) and *Quercus wislizenii* is common.

Montane Chaparral (37520): Above 4500 ft (1372 m) chamise was only a minor element in the chaparral on the most exposed sites. It was replaced by various forms of *Arctostaphylos glandulosa*; at least three subspecies have been keyed from plants on the peak. *Quercus wislizenii* has been gradually replaced on upper slopes by shrubby *Q. chrysolepis*. The only ceanothus at higher elevations is *Ceanothus integerrimus*, which is locally codominant with the manzanita. Some swales in the montane chaparral have *Lotus crassifolius* poking up through the shrubs. Other common species are *Antirrhinum multiflorum*, *Castilleja martinii*, *Cercocarpus betuloides*, *Dendromecon rigida*, *Eriogonum fasciculatum*, *Garrya flavescens* var. *pallida*, *Heteromeles arbutifolia*, *Lonicera interrupta*, *Lupinus albifrons*, *Monardella villosa*, *Mimulus bifidus* ssp. *fasciculatus*, *Orobanche bulbosa*, *Penstemon brevisflorus*, *Penstemon centranthifolius*, *Rhamnus californica* ssp. *tomentella*, *Rhamnus crocea* ssp. *ilicifolia*, and *Yucca whipplei*.

Hardwood Forest (81320): This vegetation type is poorly developed in the study area; in some areas this type is successional to chaparral. There is only one hardwood tree species, *Quercus chrysolepis*, in this vegetation type, which is distributed under and adjacent to the sugar pine forest. On poor soils *Q. chrysolepis* grades into shrubs and becomes part of the chaparral. On better soils that have not been burned for a long time, *Q. chrysolepis* forms closed thickets of scrubby trees. In spots these oak thickets are successional to chaparral, dead manzanita still forms an understory. Nowhere on the site did *Q. chrysolepis* show likelihood of forming tall productive forests. Only one large individual with dbh greater than 50 inches (127 cm) is known along the northernmost creek.

Conifer Forest (partially 84110): The total area of old-growth sugar pines is a little more than 300 acres (121 ha). Most of these are concentrated on the N. summit and the upper reaches of water courses. A few colonies of sugar pines occur on talus patches on the S. slopes. Several subtypes were identified:

Pine type: On gentle slopes near the summit, widely spaced old-growth sugar pines are mixed with a few old Coulter pines. Younger pines of both species are scattered on the slopes. Coulter pine mortality caused by bark beetles

occurs. *Quercus chrysolepis* is almost absent from this type, and only a few tall *Rhamnus californica* and short *Ribes roezlii* shrubs are present. Large understory areas with pine needle duff and bare granitic sand bear no herbs at all. *Cycladenia humilis* is concentrated under this type near the fire lookout. A few herbs of *Viola purpurea* and *Silene lemmonii* are scattered in very low density. Colonies of *Asclepias eriocarpa* are present. This vegetation type receives disturbance from minor tree cutting, an unauthorized ski development, and hikers.

Pine-oak type: On steeper slopes dropping down into streams, sugar pines grow taller than those on gentle slopes. Here *Quercus chrysolepis* forms an understory of scattered shrubs or small trees. Only in the most favorable canyon bottoms do the oaks attain large size. Coulter pine is common on the edges of these areas closest to the chaparral, but it is absent in the central portion of the forest. *Rhamnus californica* is the only widespread shrub. The herb layer is depauperate and includes *Carex multicaulis*, *Gayophytum heterozygum*, *Mimulus subsecundus*, and *Pyrola picta*. *Lupinus cervinus* is locally common in openings, and *Galium clementis* is scattered on shady rock patches. Pine regeneration of many size classes is abundant, particularly in the blow-down area. Dense stands of *Ribes roezlii* occur in gaps of Coulter pine stands, resulting from bark beetle attacks on prior stands.

Pine-cedar-oak type: In areas adjacent to the streams, incense-cedars (*Libocedrus decurrens*) are mixed with the sugar pines. *Holodiscus discolor*, which is common along the creeks, might be scattered in this type. Other species found in this type are *Montia perfoliata*, *Pteridium aquilinum*, and *Polysticum munitum*.

Chaparral transition type: In a fringe around the summit forest, the pines have an understory of dead or dying chaparral. In this border zone, young Coulter pines might be as common as sugar pines. Below the pine-shrub zone there are large areas of chaparral with widely spaced young pines. This situation is conspicuous across the summit, SE. of the fire lookout, and the saddle, NW. of the fire lookout. In most of these chaparral transitions topographic conditions are favorable for intense fires; the young pines would be unlikely to survive the next chaparral burn. The most stable pine communities on the S. portion of the mountain are on the talus slopes, where fire is less threatening.

Riparian (61510): There is no surface water above 5000 ft (1524 m) in summer. In years with above-average rainfall some creeks may start at 4800 ft (1463 m); permanent creeks flow at 4500 ft (1372 m). *Alnus rhombifolia* is a good indicator of reliable surface water. Distributions of alders follow the southernmost stream up to 4600 ft (1402 m), but they follow only up to 4500 ft (1372 m) along the other two streams. In all upper stream courses, *Aquilegia formosa*, *Aralia californica*, and *Lilium pardalinum* are likely indicators of summer water, but in dry years some seeps where these plants are often present may not have any surface flow. A list of 28 plants frequently associated with permanent summer water is available in Griffin (1975a).

Rock Outcrop (no Holland equivalent): On rock outcrops in the chaparral or large forest openings occur a number of plants not organized into recognizable associations. Seventeen species are common in these areas, but they are not distributed in a uniform way. Neighboring rock patches may have different species. Many of the rock outcrop species are floristically related to S. California or the S. Sierra Nevada.

Plant Diversity

Eighty-eight plant species were mentioned in the report.

Conflicting Impacts

The weedy flora on the disturbed sites is relatively low in species diversity (23 species are listed). Few exotic species are present above 4500 ft (1372 m), even along the trails through the chaparral. *Avena fatua* and *Bromus mollis* occur up to 4000 ft (1219 m).

Fire, insect, and other disturbances: Fire probably had been common in this area until the beginning of 20th century. Evidence on vegetation documented fire, fire suppression, and fire-hazard reduction work in the mid 1900s. The most recent fire was in 1977 (Marble Fire). Bark-beetle activity was high in the 1970s and caused mortality of many Coulter pines. Several very old stumps of incense-cedar indicate logging during the Spanish-Mexican era. Forests damaged by strong winds in the past are also present. Some sugar pines' stumps remain from shake-splitters' work, probably after 1900. The fire lookout building was constructed around 1935. An unauthorized skiing operation on the summit was reported sometime before 1970; however, its impact (if there was any) on the vegetation is not available.